

State Route 12 Corridor Study



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¹ This presentation is based on information gathered from the DRAFT Final Report of the SR-12 Comprehensive Corridor Evaluation and Corridor Management Plan from SR 29 to I-5. As a DRAFT, the report is subject to change with respect to findings and/or conclusions. It should also be noted that these findings and/or conclusions may not ever be programmed due to various reasons, including but not limited to, engineering judgment and/or budget constraints.

SR12

State Route 12

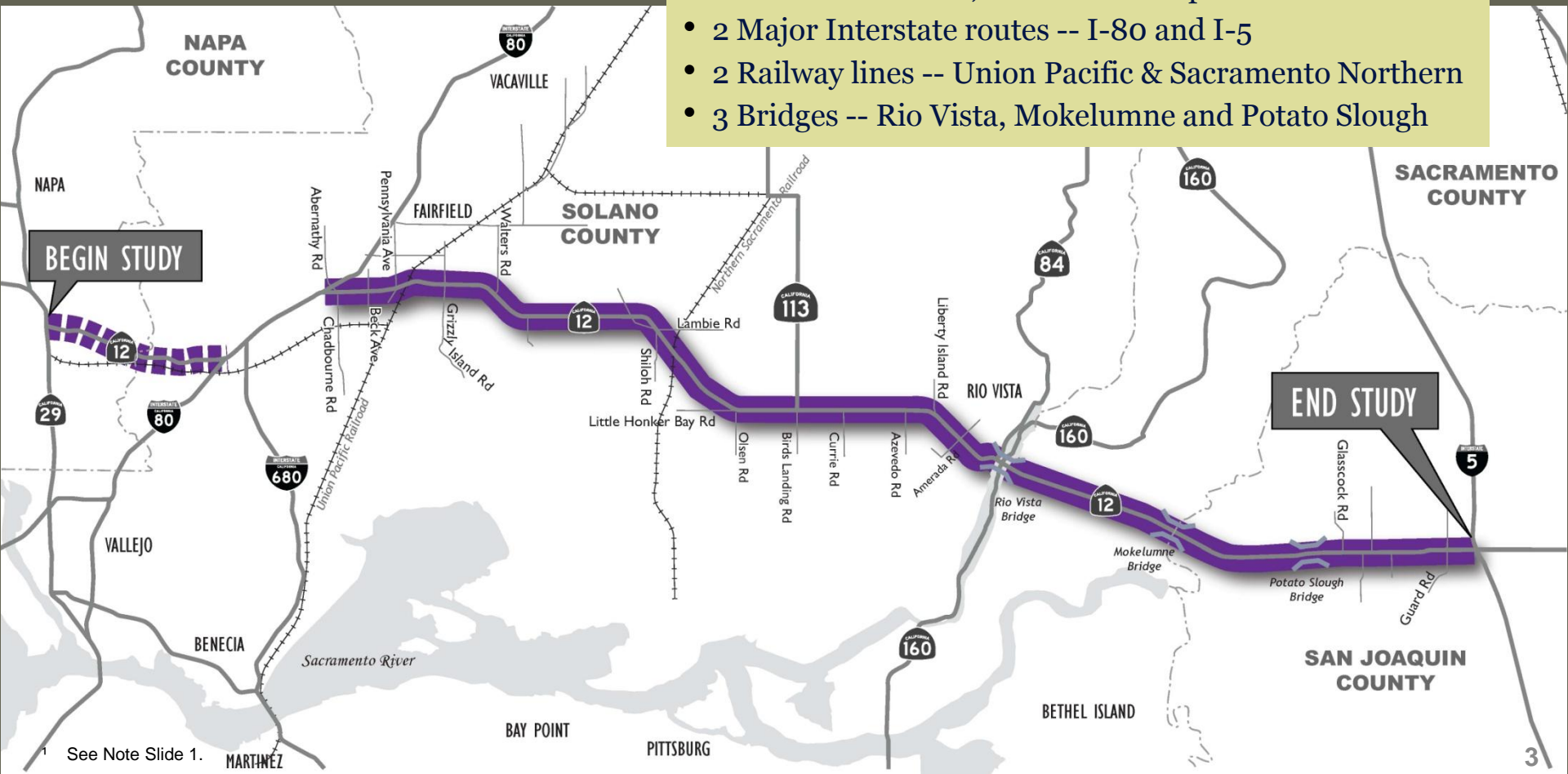
Comprehensive Corridor Evaluation and Corridor Management Plan

Public Meeting Presentation – May 2012



53-Mile, Multi-Jurisdictional Corridor

- 4 Counties -- Napa, Solano, Sacramento & San Joaquin
- 3 Caltrans Districts -- 3, 4 and 10
- Developed areas -- Suisun City, Fairfield & Rio Vista
- Rural communities, farmlands and portions of the Delta
- 2 Major Interstate routes -- I-80 and I-5
- 2 Railway lines -- Union Pacific & Sacramento Northern
- 3 Bridges -- Rio Vista, Mokelumne and Potato Slough



Inform future county and regional funding and planning processes.

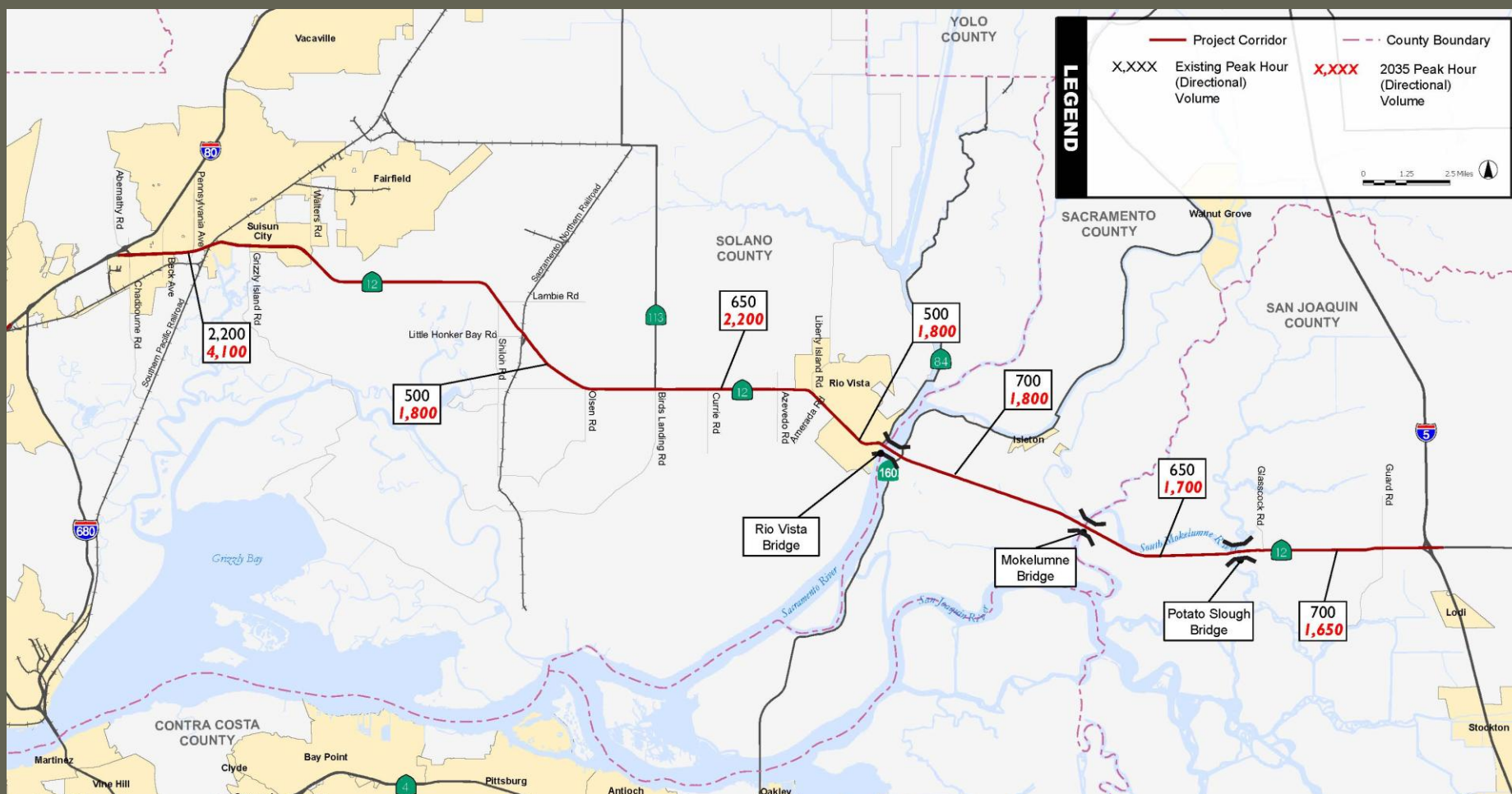
Work Plan & Major Milestones



¹ See Note Slide 1.

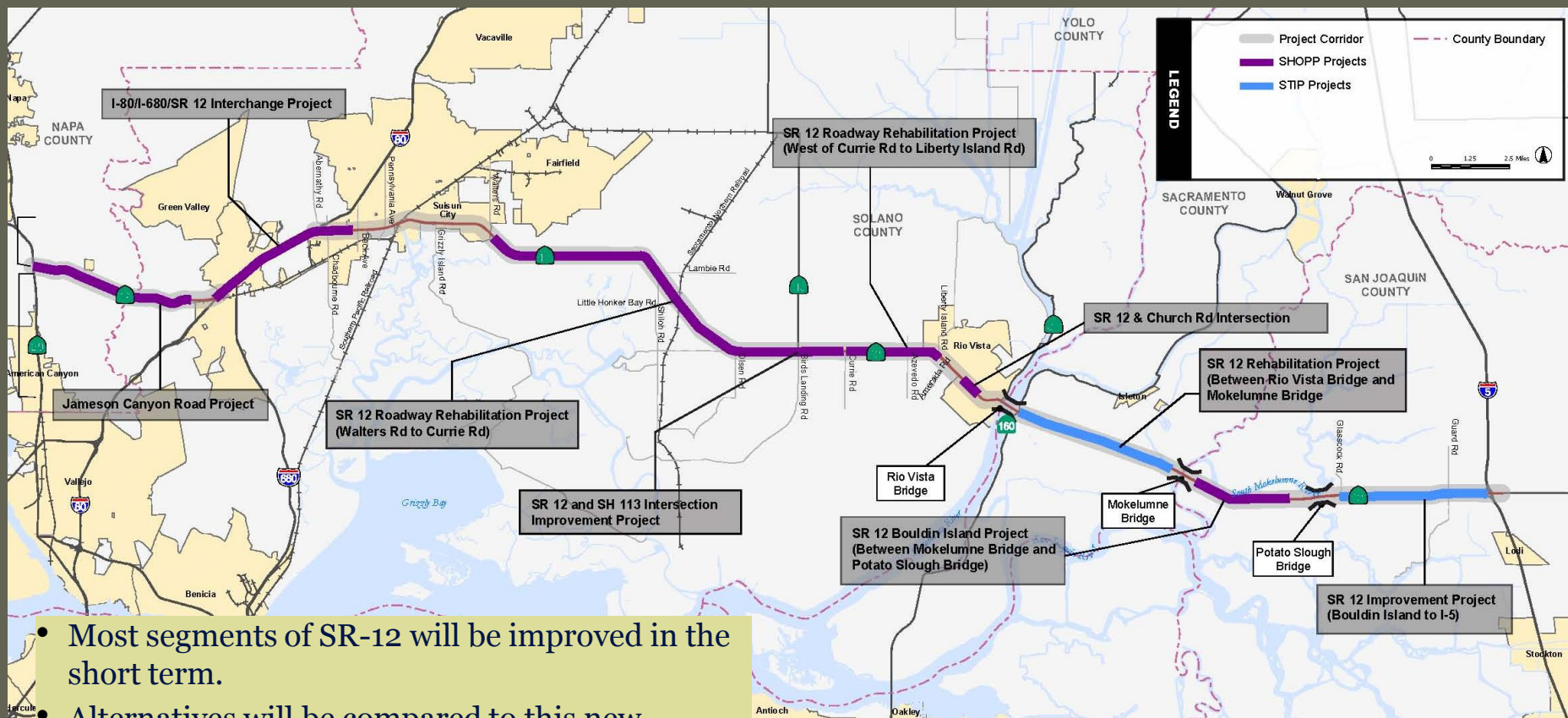
2035 Forecast

Peak Hour (Directional) Volumes



Future Conditions Analysis

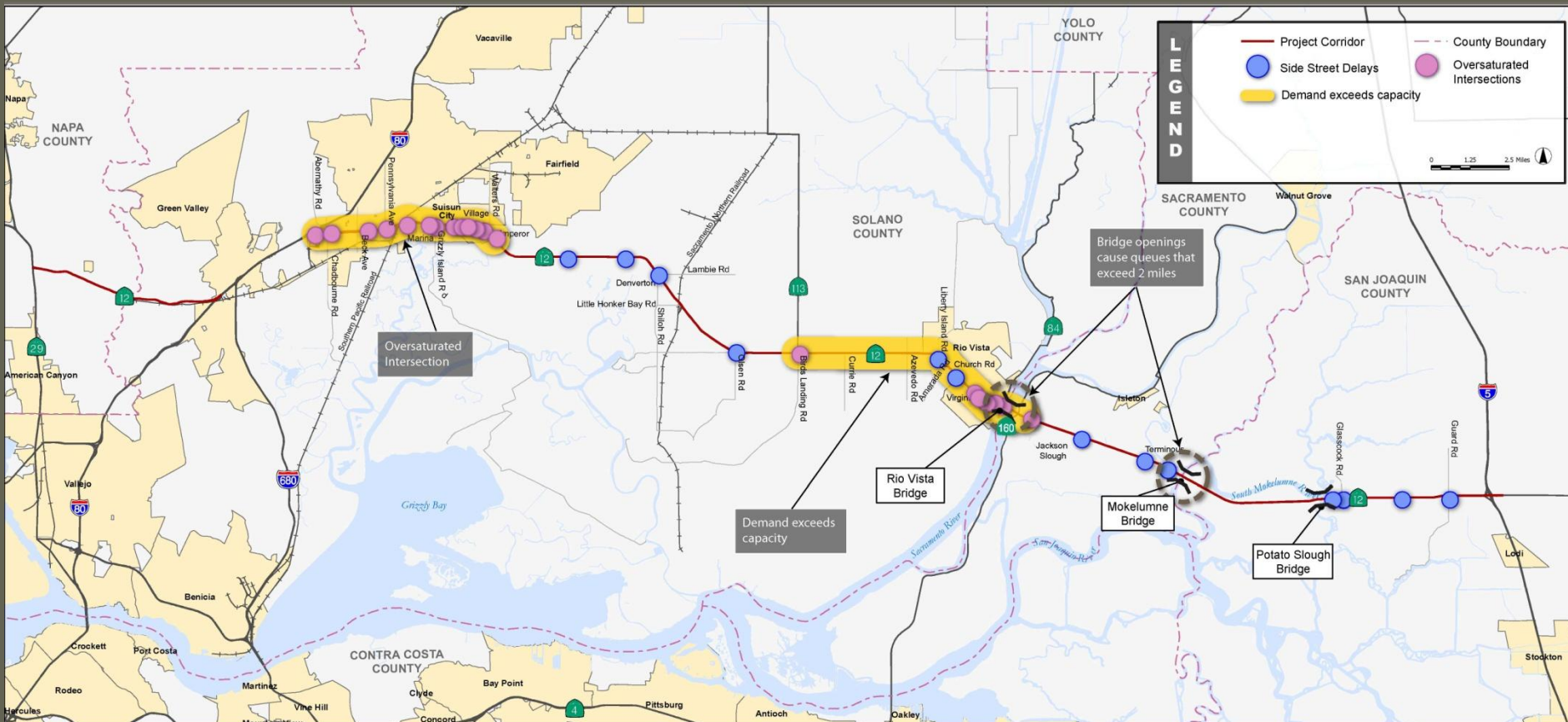
Baseline Improvements



- Most segments of SR-12 will be improved in the short term.
- Alternatives will be compared to this new Baseline for the corridor.

Summary of Operational Deficiencies

Future Year (2035)



¹ See Note Slide 1.

Corridor Improvement Strategies

- Overview of the three strategies
- Common Elements
 - Pedestrian Facilities
 - Bicycle Facilities
 - Transit
 - Intelligent Transportation Systems
 - Bridge Operations
 - Sea Level Rise



SR-12 – Rio Vista Bridge

Corridor Improvement Strategies

- **Gap-fill Strategy**

- Builds upon Caltrans existing SHOPP/STIP projects
- Addresses traffic, safety and operational problems

- **Barrier Separated Two-Lane Strategy**

- Implement an enhanced two-lane cross section throughout the corridor
- Includes concrete median barrier
- Strategically located passing lanes

- **Four-Lane Strategy**




- Implements a minimum four-lane section throughout the corridor
- Includes bridge re-alignments
- Evaluates expressway options

Evaluation Methodology

- **All three strategies are compared to the Baseline case**
- **The initial evaluation was conducted without regard to cost**
 - Transportation Systems Efficiency
 - Safety
 - Economic Vitality
 - Environment
 - Healthy Communities
- **Cost was considered after the initial evaluation**
 - Capital Cost
 - O&M Cost (life-cycle)
 - Cost Effectiveness

Comparison of Alternatives

Transportation System Effectiveness

Evaluation Categories	Baseline		Gap-fill		Two-Lane		Four-Lane	
	2015	2035	2015	2035	2015	2035	2015	2035
Transportation System Effectiveness								
Average Peak Hour Travel Time (mins)	78	87	75	83	73	78	53	56
Daily VMT	485,000	831,200	485,500	831,200	485,800	848,600	495,000	882,000
Daily VHT	17,300	28,000	15,950	24,650	15,240	24,600	14,240	20,220
Improved pavement (Centerline miles)	N/A		2.5		13.4		25.3	
Number of Bridges with Sufficiency Rating < 80%	2		2		1		0	



Good



Better



Best

Comparison of Alternatives

Environment

Evaluation Categories	Baseline		Gap-fill		Two-Lane		Four-Lane	
	2015	2035	2015	2035	2015	2035	2015	2035
Environment								
Construction within existing ROW (acres)	N/A		20.0		197.7		214.1	
Construction outside existing ROW (acres)	N/A		5.9		44.2		399.2	
CO2 Emissions (tonnes/year)	51.4		49.2		48.9		46.8	



Good



Better



Best

Comparison of Strategies based on Evaluation Criteria

- **The Gap-fill Strategy is best suited as a short-term plan for SR-12**
 - Localized improvements in and west of Rio Vista
 - Robust ITS Implementation
 - Bridge operational improvements
- **The Four-Lane Strategy provides the best long-term mobility benefits**
 - Shortest travel times
 - Most reductions in recurrent and non-recurrent delay
 - New bridges address sufficiency ratings
- **The Four-Lane Strategy has the greatest impact to the environment due to realignments and right-of-way needs**

Cost Effectiveness Results

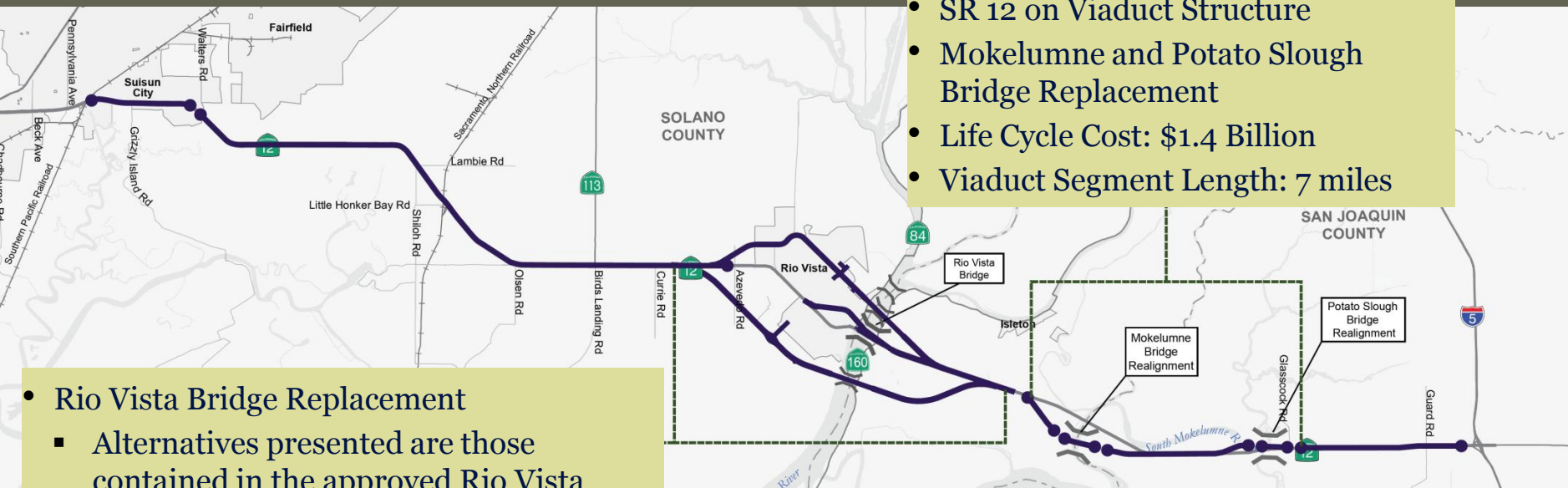
Evaluation Categories	Baseline		Gap-fill		Two-Lane		Four-Lane	
	2015	2035	2015	2035	2015	2035	2015	2035
Cost Effectiveness								
Capital Cost (millions)	N/A		\$84		\$354		\$2,828	
O&M Life Cycle Cost (millions)	N/A		\$18		\$43		\$90	
Life Cycle Cost (millions)	N/A		\$102		\$397		\$2,918	
Cost Effectiveness Index (dollars per person hour of delay saved)	N/A		\$4.2		\$14.5		\$38.1	

 Good
  Better
  Best

Cost Drivers of the Four-Lane Alternative

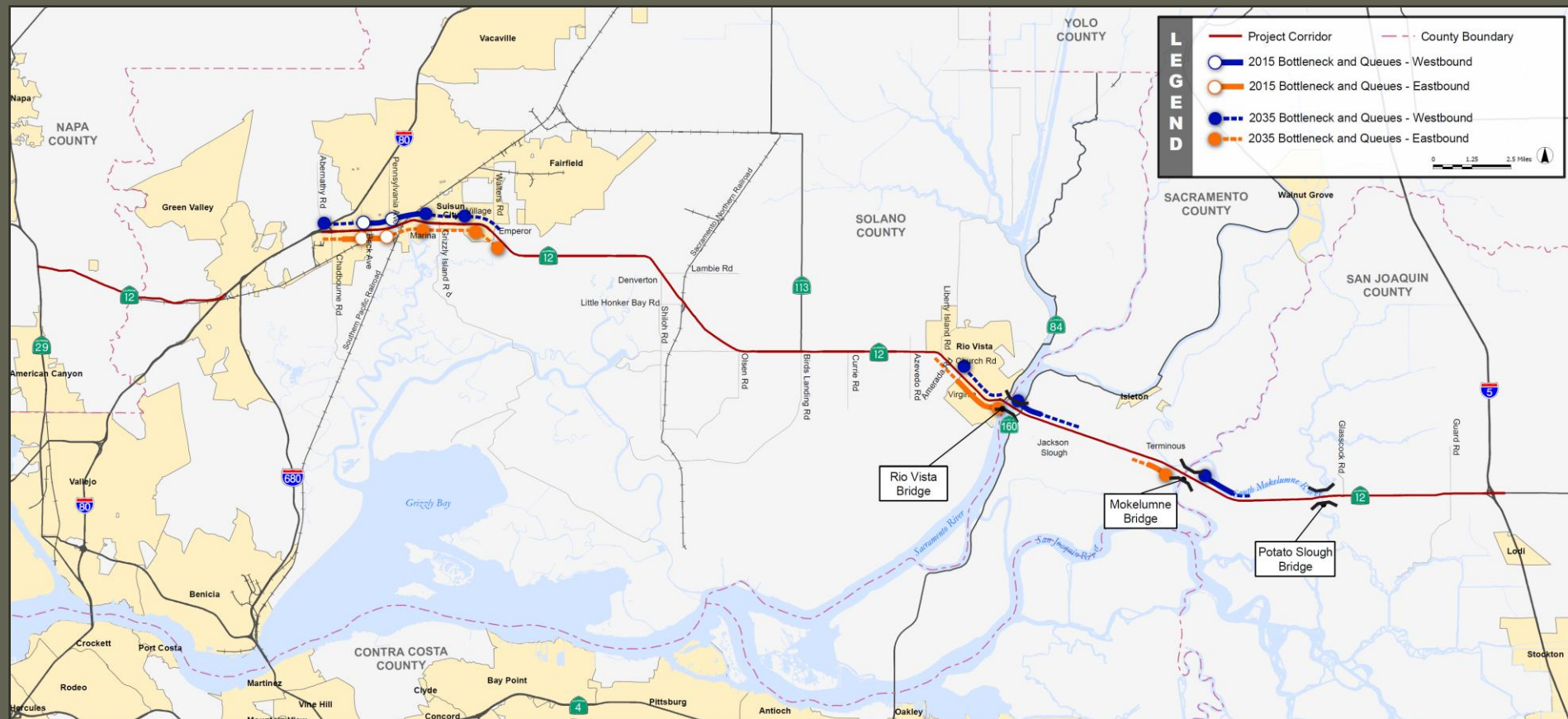
- Rio Vista Bridge Replacement
 - Alternatives presented are those contained in the approved Rio Vista Study.
- Life Cycle Cost: \$998 Million
- Segment Length: 9 miles

- SR 12 on Viaduct Structure
- Mokelumne and Potato Slough Bridge Replacement
- Life Cycle Cost: \$1.4 Billion
- Viaduct Segment Length: 7 miles



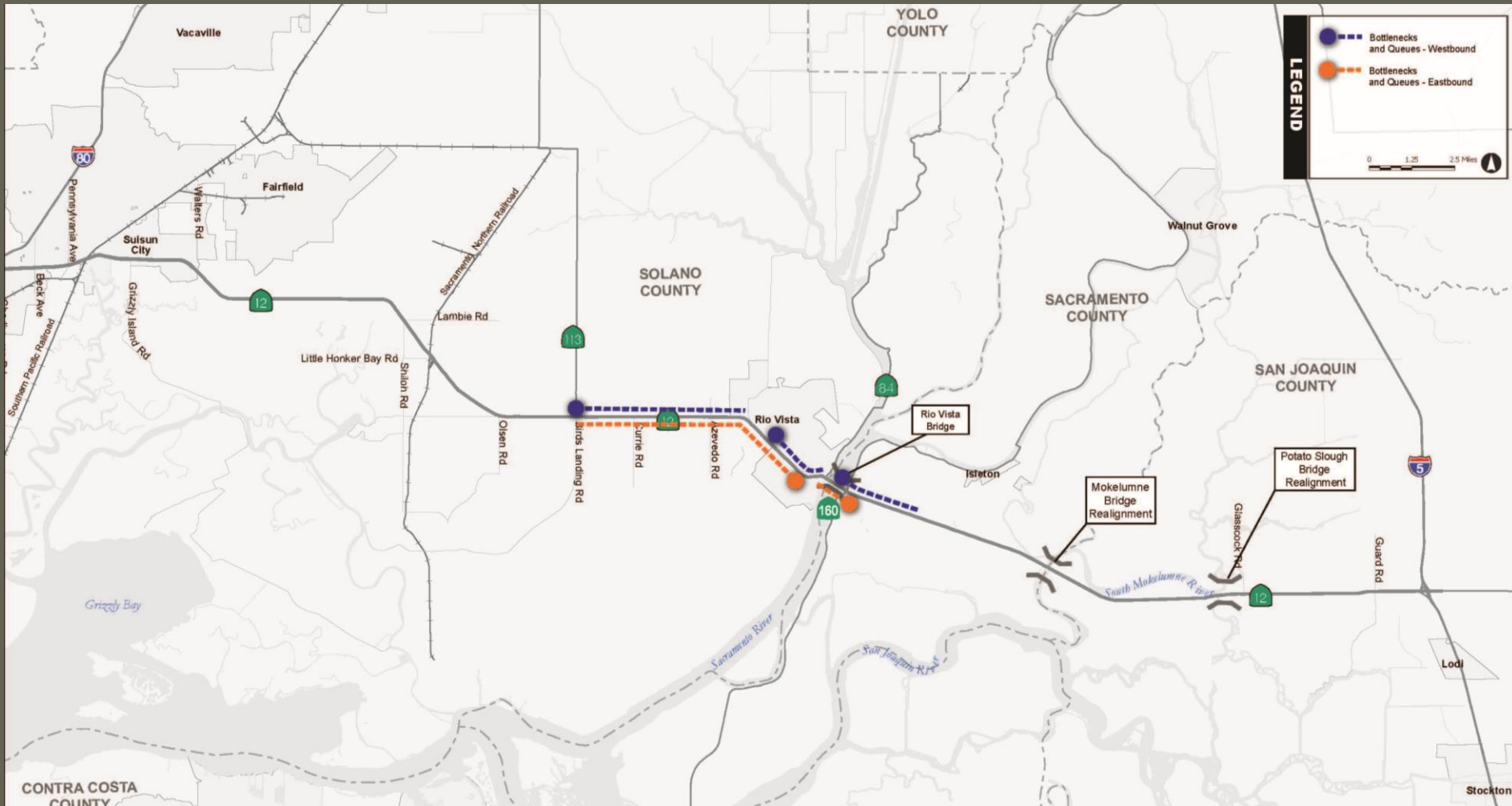
Location of Controlling Bottlenecks

2015 and 2035



Location of Secondary Bottlenecks

2015 and 2035

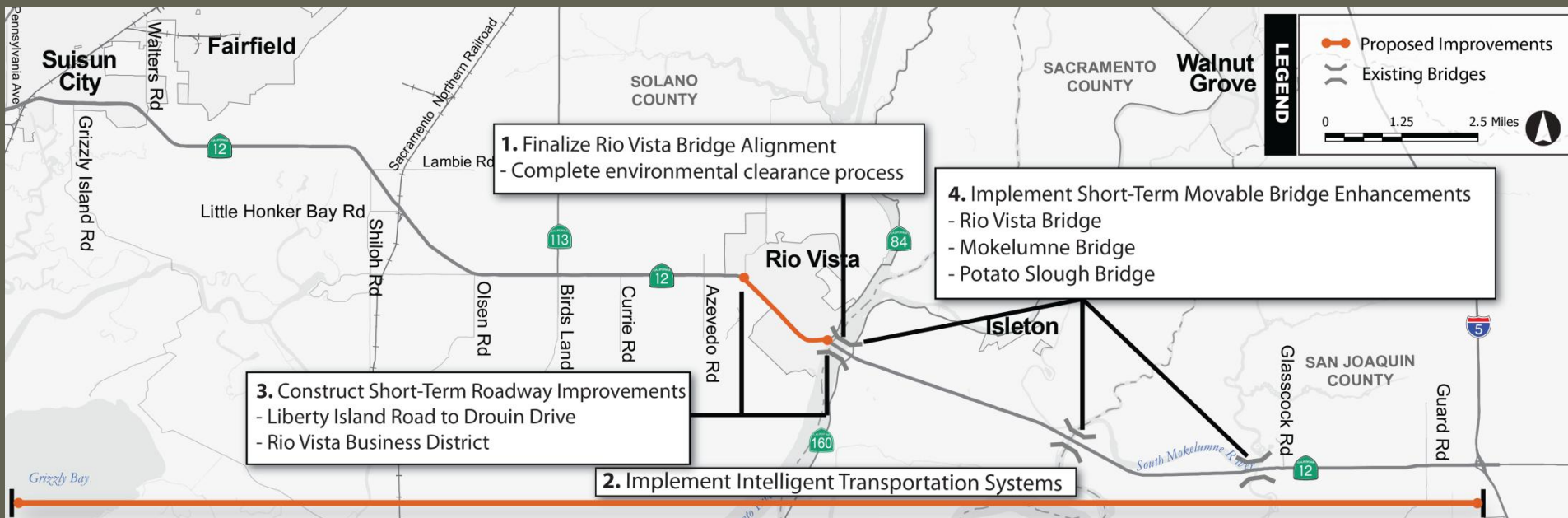


¹ See Note Slide 1.

Corridor Improvement Strategies

Short-term Strategies

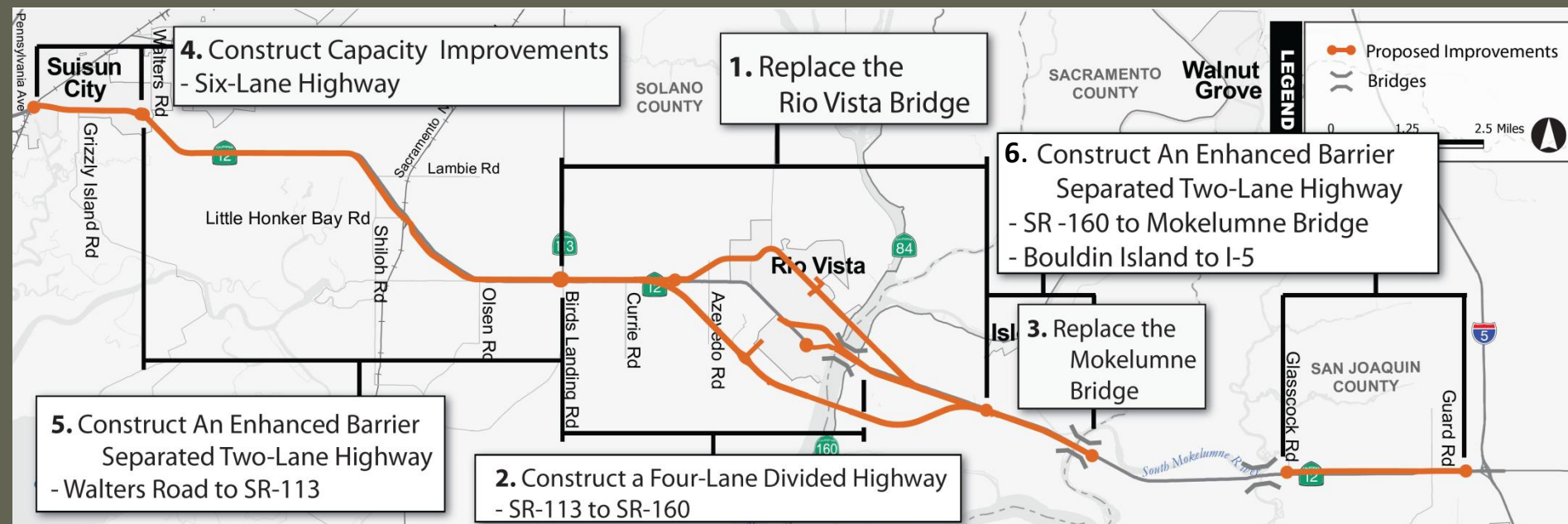
2015-2020



Corridor Improvement Strategies

Long-term Strategies

2020-2035



Corridor Improvement Strategies

Short-term Costs

Life-Cycle Cost-Effectiveness for the Short-Term Strategy

ID	Mitigation Improvement	Life Cycle Mobility Benefits	Life Cycle Costs	Cost-Effectiveness
		(Veh-hr of delay saved)		(\$/veh-hr of delay saved)
1	Implement corridor-wide ITS System	18,805,405	\$37,000,000	\$2.0
2	Improve bridge operations at the Rio Vista, Mokelumne and Potato Slough bridges including implementation of advance ITS elements	5,613,210	\$12,300,000	\$2.1
3	Construct standard width shoulders and improve pavement surface between Liberty Island Road and Drouin Drive	0	\$35,500,000	-
4	Construct streetscaping and pedestrian walkway improvements with curb and gutter improvements for intersections through Rio Vista	220,050	\$19,500,000	\$88.6
Total		24,418,615	\$104,300,000	\$4.3

¹ See Note Slide 1.

Corridor Improvement Strategies

Long-term Costs

Life-Cycle Cost-Effectiveness for the Long-Term Strategy

ID	Mitigation Improvement	Life Cycle Mobility Benefits	Life Cycle Costs	Cost-Effectiveness
		(Veh-hr of delay saved)		(\$/veh-hr of delay saved)
1	Construct phase II of the I-80/I-680/SR-12 interchange which includes interchanges at Beck and Pennsylvania Avenue Construct intersection improvements from Civic Center to Walters Road Construct six-lane roadway between Abemathy and Walters Road	48,426,495	\$75,000,000	\$1.6
2	Construct standard width shoulders, include passing lanes and improve pavement surface between Walters Road and SR 113	1,400,000	192,100,000	\$137
3	Construct a four-lane roadway between SR 113 and River Road Construct pedestrian improvements, landscaping and the streetscape improvements in downtown Rio Vista (Church Road to Rio Vista Bridge)	2,250,000	64,400,000	\$28.6
4	Construct a high level bridge or tunnel for the Rio Vista Bridge	8,190,360	\$839,800,000	\$102.5
5	Construct an improved two-lane segment (expandable to four-lanes) with improved shoulders, pavement and construct median barrier between the Rio Vista Bridge and Mokelumne Bridge	290,800	\$99,000,000	\$340.4
6	Construct a new mid-level bridge for the Mokelumne River Crossing	3,700,000	\$169,100,000	\$45.7
7	Construct an improved two-lane segment (expandable to four-lanes) with improved shoulders, pavement and construct median barrier between Mokelumne and I-5	1,374,398	\$55,700,000	\$40.5
Total		65,632,053	\$1,495,100,000	\$22.7

¹ See Note Slide 1.

Next Steps

- Upcoming Work
 - Final Report – June 2012
- To provide input:
 - www.movingsr12forward.com



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